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THE Poultry and Egg SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

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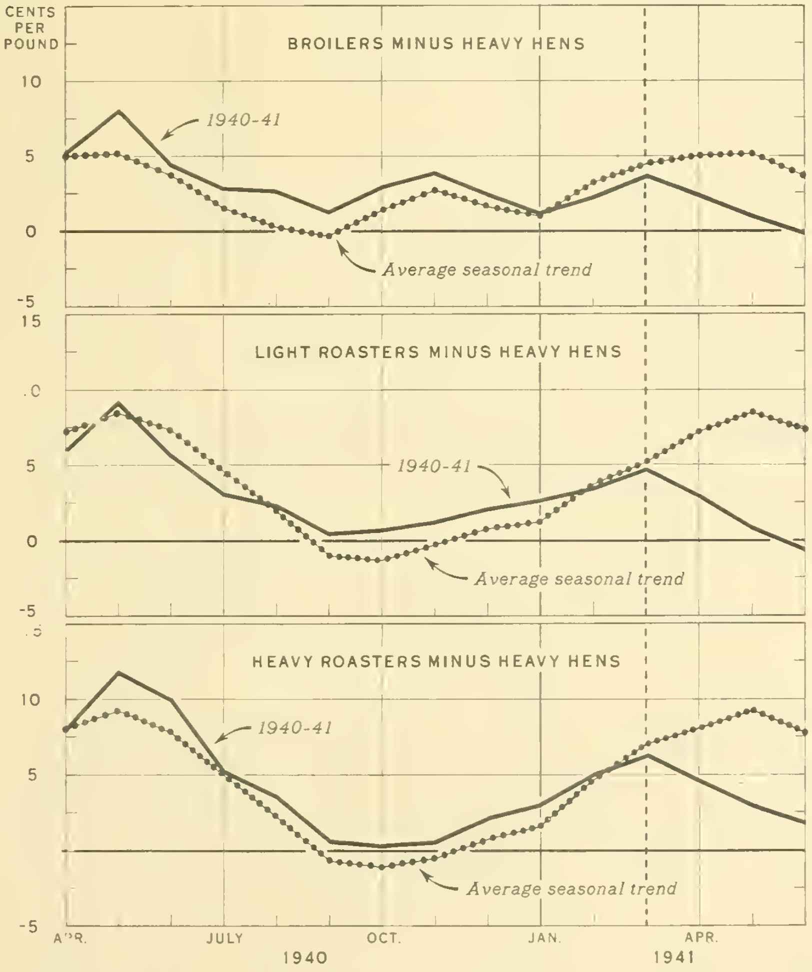
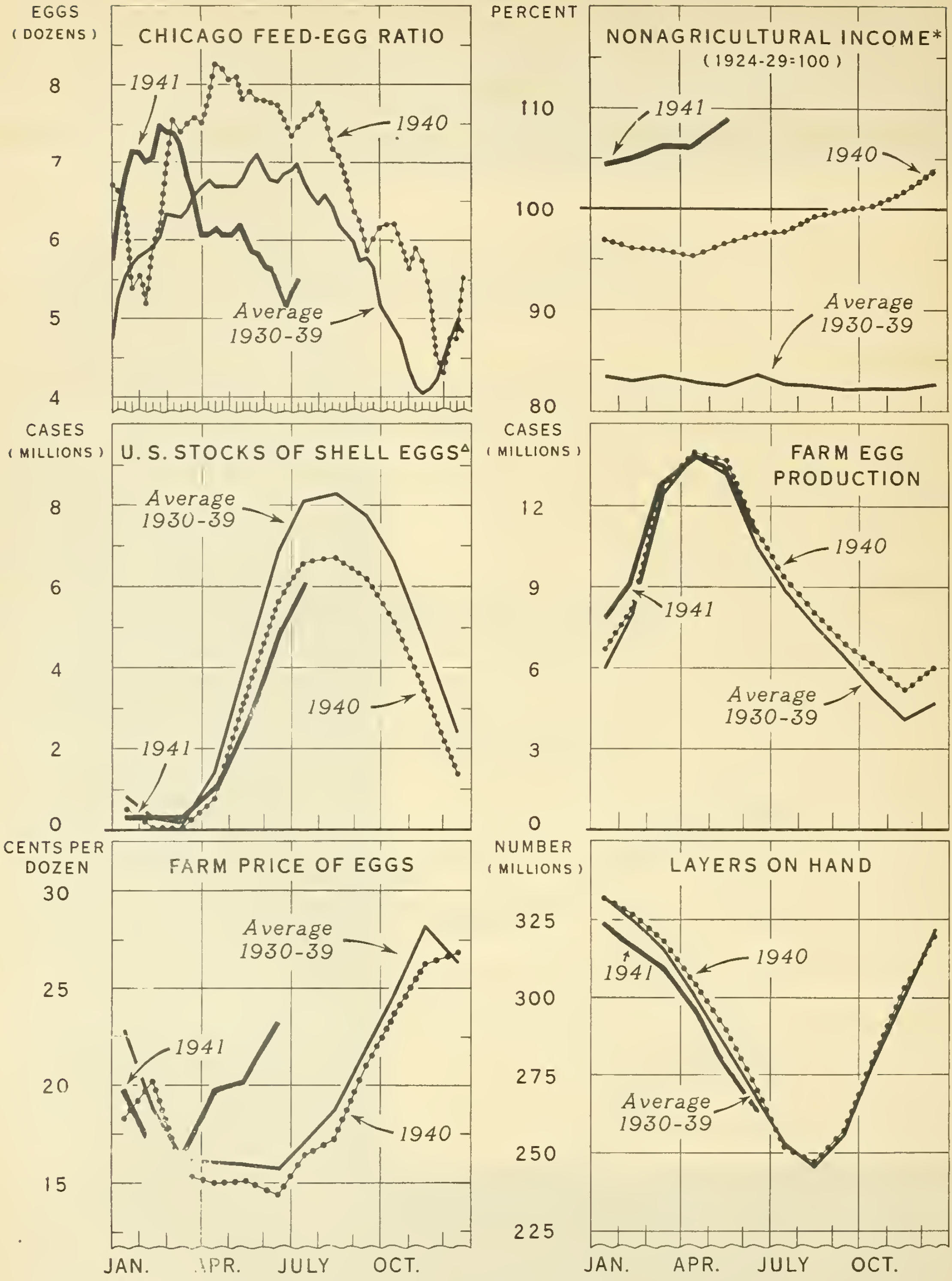


U S DEPARTMENT OF AGRICULTURE NEG. 39301 BUREAU OF AGRICULTURAL ECONOMICS

During 1940 and the first 3 months of 1941 the difference between prices of heavy hens and prices of certain market classes of young chickens was about average. However, during the last 3 months the difference has been much smaller than usual. This is largely a result of relatively small marketings of fowls and large marketings of young chickens.

THE EGG SITUATION AT A GLANCE



A. M. S. DATA, EXCEPT NONAGRICULTURAL INCOME   ** INDEX NUMBERS, ADJUSTED FOR SEASONAL VARIATION*

△ FIRST OF THE MONTH. EXCLUDING S. M. A. HOLDINGS, BEGINNING APRIL 1, 1940

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FIGURE 1

THE POULTRY AND EGG SITUATION

Summary

An increase approaching 10 percent over a year earlier in the number of layers by next January is practically assured since about 13 percent more young chickens are on farms now than a year ago and other conditions are continuing favorable. A large proportion of old hens is being retained on farms to supplement the pullets from this year's hatch. The decrease from June 1 to July 1 in the number of hens in sample farm flocks was about 35 percent less than between the same dates in 1940. Smaller receipts of live fowls at midwest markets indicate that farmers are continuing to cull out fewer hens. The number of layers on farms in the United States in June was 1.5 percent smaller than a year earlier but the July 1 figure was slightly higher than the number on July 1, 1940. Size of laying flocks will increase rapidly until January 1 as this year's pullets are added.

Total egg production in June was slightly (0.3 percent) larger than in June 1940, making the aggregate production for the first half of this year about 3 percent larger than in the first half of last year. Receipts of eggs at midwest primary markets since July 1 have been considerably larger than a year earlier.

Wholesale egg prices in mid-July were about 2 cents lower than the peak for the year to date in late June but they were about 10 cents (65 percent) higher than a year earlier. The Chicago feed-egg ratio was about 25 percent more favorable to producers in mid-July than a year ago. Egg prices are likely to continue well above a year earlier in coming months. The rise during the last half of this year from the present comparatively high levels, however, probably will be relatively less than in the last 6 months of 1940.

Stocks of frozen eggs on July 1 were 19 percent larger than a year earlier whereas total stocks of shell eggs were 14 percent smaller. Storage stocks of young chickens were about twice as large on July 1 as on July 1, 1940 but stocks of turkeys and fowls were smaller. Total stocks of all poultry were 4 percent over July 1 last year.

In contrast to the smaller farm marketings of fowls, sales of young chickens apparently are much larger now than a year ago. During the week ended July 12 receipts of live young stock at midwest markets were 57 percent larger than a year earlier. The earlier start of the hatching season this year than last is partially responsible for the much larger receipts of young stock in recent weeks. But supplies of young stock for market this year are much larger, as indicated by the 24 percent larger hatchery output in the first half of the year and the 13 percent more young chickens on farms July 1.

Wholesale prices of fowl showed little change from mid-June to mid-July while prices of some classes of young stock strengthened. The average price received by farmers for chickens (including fowls) in mid-June was 3 cents (23 percent) higher than a year earlier. During the remainder of this year prices received by farmers both for chickens and for turkeys are expected to be higher than in the last half of 1940.

-- July 21, 1941

FEED SITUATION

Stocks of grain on hand and growing conditions up to July 1 indicate that the 1941-42 supplies of feed grains will again be much above average, if not the largest in 20 years. The supply of corn is expected to approximate 3,200 million bushels for the fourth time in 2 decades. Even after excluding corn sealed or held by the Government and allowing for an increase in the number of grain-consuming animal units, supplies of feed grains per animal unit in 1941-42 will be above the 1928-32 average. Stocks of corn sealed or held by the Government on October 1 are expected to be considerably smaller than on October 1, 1940 and unsealed stocks much larger.

Large supplies of byproduct feeds are in prospect for the coming marketing year. Large crushings of flaxseed and soybeans are indicated, and most of the meal from these seeds will be available for domestic use. Production of wheat millfeeds and corn gluten feed in 1941-42 may be larger than a year earlier as a result of an increase in domestic demand for flour and corn products.

The cost of the poultry ration increased slightly during the past month but because of the much higher egg prices now than a year ago the feed-egg ratio is much more favorable. During the week ended July 12 about 2 dozen (26 percent) fewer eggs were required to buy 100 pounds of poultry feed than were required a year earlier. The feed-egg ratio is expected to continue more favorable to producers than a year earlier during the remainder of 1941.

Feed-egg ratio at Chicago

(Dozens of eggs required to buy 100 pounds of poultry ration)

Year	Week ending as of 1941											
	Mar.	May	June			July				Aug.	Sept.	Dec.
	29	31	14	21	28	5	12	19	26	2	27	27
	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.	Doz.
Average 1930-39	6.60	7.11	6.77	6.75	6.86	6.90	6.98	6.76	6.59	6.44	5.65	4.83
1939	6.35	7.45	6.90	6.78	6.71	6.61	6.37	6.05	5.76	5.85	6.39	6.62
1940	7.59	7.82	7.78	7.74	7.57	7.34	7.45	7.57	7.61	7.78	6.02	5.52
1941	6.57	5.83	5.62	5.43	5.19	5.35	5.53					

HATCHINGS

The commercial hatchery output of baby chicks in June this year was 69 percent larger than in June 1940. This has brought the total for the first half of the year to about 25 percent over the first half of 1940. This year's first half total was about 24 percent above the previous record output in the period January-June 1939.

As a result of the record large late hatch this year, the increase in the number of young chickens in flocks of crop reporters from June 1 to July 1 was the largest on record for this period. The margin over a year earlier increased from about 8 percent on June 1 to nearly 13 percent on July 1. The July 1 percentage increases in the number of young chickens over a year earlier by regions are as follows: North Atlantic, 13 percent; East North Central, 6 percent; West North Central, 14 percent; South Atlantic, 7 percent; South Central, 13 percent; and Western, 32 percent.

EGG SITUATION

Present number of young chickens assures the desired increase in layers for 1942

In past years the percentage change from a year earlier in the number of layers on farms each January has averaged about half as large as the percentage change from a year earlier in the number of young chickens reported in farm flocks the previous June or July. Because of unusual circumstances in some years, however, the actual changes have been considerably different from this average relationship. Most important factors in the situation this year indicate that numbers of layers will be increased to the maximum possible from young stock now on farms. Thus the Department of Agriculture's goal for a 10-percent expansion in laying flocks by next January over a year earlier probably will be attained.

Removal of fewer old hens from laying flocks also is helping to increase the size of laying flocks for next winter. For several weeks the rate of culling farm flocks has been below that of a year earlier. Marketings of live fowl in the Midwest have been more than 20 percent under a year earlier since about the first of June. The decrease in the number of layers from May to June also was 20 percent smaller than in the like period of 1940. The decrease from June 1 to July 1 in the number of hens in sample farm flocks was about 35 percent less than that between the same dates last year. To date these smaller declines in the number of layers have resulted almost entirely from the sale of fewer old hens by farmers since few pullets are added to laying flocks before August.

The number of layers on farms during June was only about 1.5 percent smaller than in June 1940, and on July 1 the number of layers in sample farm flocks was slightly larger than a year earlier.

Egg production in June the largest since 1930

The 2-percent higher rate of lay in June slightly more than offset the 1.5 percent fewer layers, and total production for the month was the largest since 1930. Total egg production for the first half of the year was about 3 percent larger than in the first half of 1940. The rate of lay per hen in the first 6 months of 1941 was about 6 percent higher than in the corresponding period of 1940. With the size of laying flocks now increasing relative to a year earlier, production of eggs will be larger as the rate of lay probably will be at least as high as the rate a year earlier and probably higher.

Number of layers on farms, United States

Year	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.
Average 1930-39	332	325	315	301	284	267	253	246	256	278	300	322
1938	307	301	292	278	262	248	236	234	245	269	293	314
1939	322	316	306	292	276	260	246	242	253	279	305	326
1940	332	327	318	304	289	270	252	247	257	279	303	320
1941	324	318	308	295	280	265						

Average number of eggs produced per layer, United States

Year	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Average 1930-39	6.6	8.9	14.3	16.7	16.8	14.2	12.7	11.2	8.9	6.8	5.0	5.2
1938	7.9	9.9	15.4	17.5	17.3	14.9	13.6	11.8	9.4	7.5	5.9	6.4
1939	8.0	9.7	14.9	17.0	17.0	14.6	13.2	11.7	9.3	7.4	6.0	6.8
1940	7.2	9.0	14.4	16.5	17.0	14.8	13.4	11.8	9.7	7.9	6.2	6.8
1941	8.7	10.3	15.0	16.9	17.4	15.1						

Total farm production of eggs, United States

Year	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases	Mil. cases
Average 1930-39	6.0	8.0	12.5	13.9	13.2	10.5	8.9	7.6	6.4	5.2	4.1	4.7
1938	6.7	8.3	12.5	13.5	12.6	10.3	8.9	7.6	6.4	5.6	4.8	5.5
1939	7.2	8.5	12.6	13.8	13.0	10.6	9.1	7.8	6.5	5.7	5.1	6.1
1940	6.7	8.2	12.7	14.0	13.7	11.1	9.4	8.1	7.0	6.1	5.2	6.0
1941	7.9	9.1	12.8	13.9	13.5	11.1						

Purchases of dried and frozen eggs by the Department of Agriculture during the third week in July were the largest thus far under the present purchase program. Total purchases of all eggs to date this year are approximately equivalent to 3-1/4 million cases of shell eggs.

Purchases of eggs by the Department of Agriculture

Week ending as of 1941	Shell		Frozen	Dried
	1940	1941	1941	1941
	Cases	Cases	1,000 pounds	1,000 pounds
May 3	34,099	141,756	---	---
10	55,852	137,606	---	---
17	80,591	103,233	12,642	618
24	254,296	42,000	1,247	100
31	260,475	35,600	1,638	157
June 7	263,265	25,201	1,379	145
14	233,560	10,400	1,776	350
21	199,261	2,800	1,801	100
28	161,895	---	1,283	140
July 5	40,274	5,930	13,810	1,583
12	13,385	50,000	2,683	210
19	34,289	140,403	13,835	1,930
26	49,519			

Stocks of frozen eggs at an all-time peak

The into-storage movement of frozen eggs in recent weeks exceeded previous records, and storage holdings are by far the largest on record for any date. Total United States stocks of frozen eggs on July 1 were about 19 percent larger than on July 1, 1940. The Department of Agriculture owned the equivalent of 419,000 cases of shell eggs but privately owned stocks alone were about 7 percent larger than on July 1, 1940. The largest previous stocks of frozen eggs on record were those of August 1, 1937.

Total United States stocks of shell eggs on July 1 were 14 percent smaller than a year earlier. Privately owned stocks, however, were only about 7 percent smaller since the Department owned only about one third as many shell eggs on July 1 this year as on July 1, 1940. Supplies of storage eggs this coming fall and winter will be supplemented by what probably will be the largest production on record for the period. Purchases by the Department under the announced purchase program, however, will absorb a large part of the prospective increase in production. Total stocks of shell and frozen eggs combined on July 1 were about 2 percent smaller than on July 1, 1940.

Eggs: Storage stocks in the United States and storage movement at 26 markets

Year	United States stocks		Into-storage movement, week ending as of 1941					
			June	July				Aug.
	June 1	July 1	28	5	12	19	26	2
	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases
Shell:								
Average 1930-39	6,868	8,135	130	89	52	36	7	1/ 30
1939	5,880	6,977	86	56	16	2	1/ 2	1/ 33
1940	2/5,662	2/ 6,580	180	99	43	29	69	40
1941	2/4,960	2/3/ 6,124	119	50	37			
Frozen:								
Average 1930-39	2,995	3,465	---	---	---	---	---	---
1939	3,369	4,042	71	52	44	13	0	10
1940	3,537	4,296	105	93	29	27	16	9
1941	4,059	3/4/ 4,677	255	139	155			

1/ Out-of-storage movement.

2/ Excludes Department of Agriculture holdings as follows: June 1, 1940, 318,000 cases; July 1, 1940, 933,000 cases; June 1, 1941, 415,000 cases; and July 1, 1941, 327,000 cases.

3/ Preliminary.

4/ Excludes Department of Agriculture holdings of 419,000 cases.

Egg prices continuing well above a year earlier

Wholesale egg prices reached a peak for the year to date in late June. By mid-July, however, they had declined about 2 cents to a level about 1 cent higher than in mid-June. Receipts of eggs at central western primary markets in mid-June were about 50 percent larger than a year earlier compared to a difference of less than 30 percent in mid-June. The average price received by farmers for eggs in mid-June was the highest for the month since 1929, about 9 cents higher than in June 1940.

Because of the much stronger demand in prospect for coming months and the Department's egg purchase program, egg prices are likely to continue well above prices a year earlier. The rise during the last half of this year from the present comparatively high levels, however, probably will be relatively less than in the corresponding months of 1940.

Price per dozen received by farmers for eggs, United States

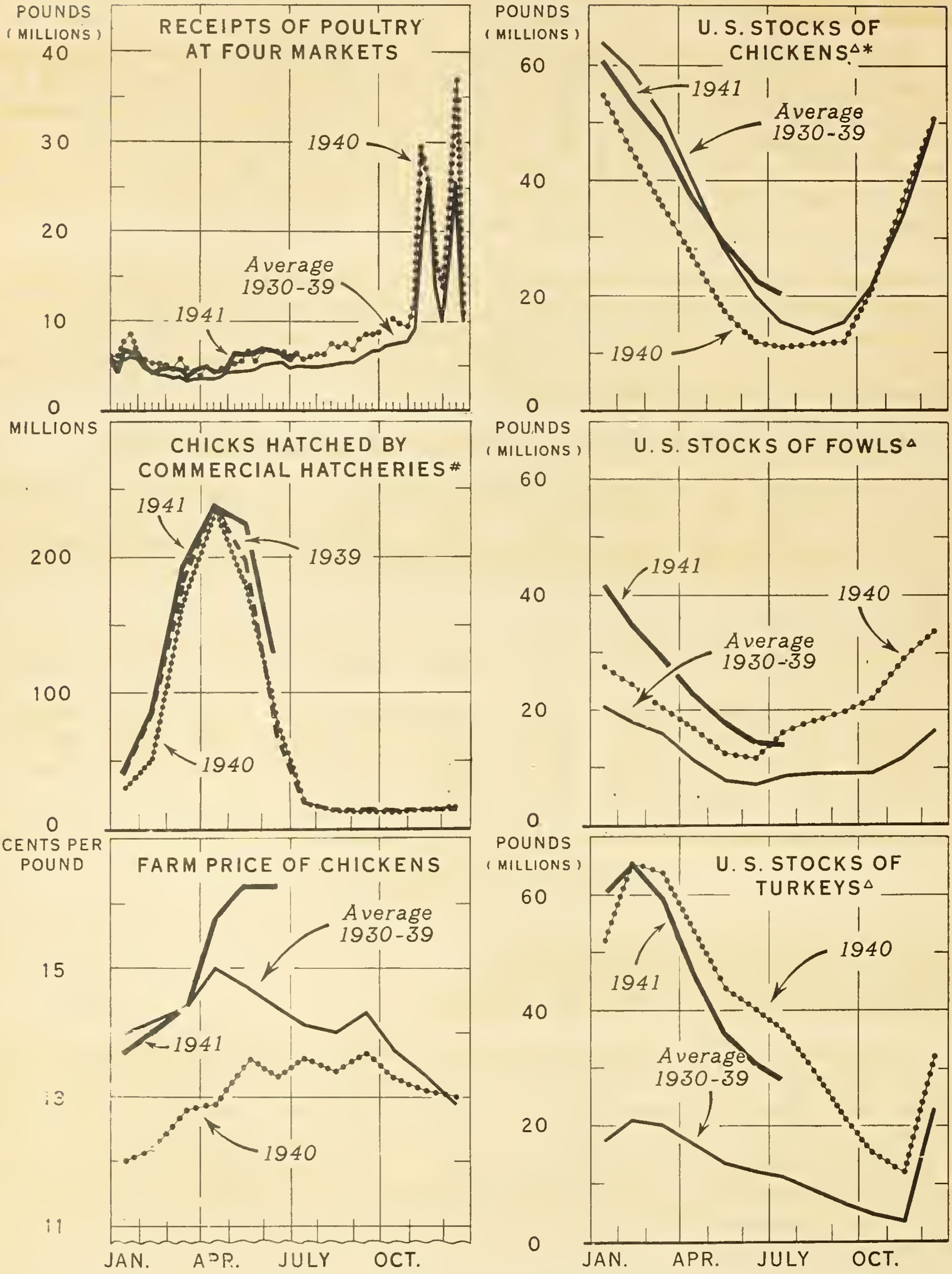
Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Average:												
1930-39	22.8	18.8	16.1	16.0	15.9	15.7	17.0	18.7	21.9	24.7	28.2	26.3
1938	21.6	16.4	16.2	15.0	17.6	18.2	19.9	21.0	24.9	27.1	29.0	27.9
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	17.5	20.6	22.9	25.8	20.5
1940	18.3	20.2	15.4	15.0	15.1	14.4	16.4	17.2	21.0	23.7	26.2	26.8
1941	19.7	16.8	16.4	19.7	20.1	23.2						

POULTRY SITUATION

Farm marketings of young chickens in early July much larger than a year earlier but volume of fowls is smaller

Receipts of live young chickens at central western primary markets in early July were nearly 80 percent larger than a year earlier. Receipts of fowls on the other hand were between 20 and 30 percent smaller. The margin of receipts of young stock over a year earlier appears unduly large because this year's hatching started much earlier. However, with 13 percent more chickens being raised on farms this year than last marketings of chickens off farms in the next several months probably will continue much larger than a year earlier.

THE POULTRY SITUATION AT A GLANCE



A. M. S. DATA *△ FIRST OF THE MONTH* ** INCLUDES BROILERS, FRYERS AND ROASTERS*

# DATA FOR 1941 ARE PRELIMINARY

U. S. DEPARTMENT OF AGRICULTURE NEG. 39177 BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 2

Receipts of dressed poultry at four markets

(New York, Chicago, Philadelphia, Boston)

Year	Week ending as of 1941									
	May		June		July				Aug.	Sept.
	24	31	21	28	5	12	19	26	2	27
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Average 1930-39	4,501	4,615	5,274	5,428	4,682	4,950	4,892	4,880	4,876	6,627
1939	5,749	5,668	6,515	6,139	5,357	6,300	5,942	6,948	5,872	7,530
1940	6,671	5,522	6,584	6,653	6,044	6,406	5,724	6,079	6,265	8,403
1941	6,344	6,380	6,789	6,327	5,789	6,659				

Storage holdings of young stock are much above average

Storage stocks of young chickens (broilers, fryers, and roasters), are now the largest in several years. Combined they are about twice as large now as a year ago. With the prospective heavy marketings in coming months they probably will continue much above average. Stocks of fowl, on the other hand, are smaller than a year earlier for the first time this year. The net reduction in holdings of turkeys during June was much less than in May because of the movement of breeder hens to market. Compared with the record high holdings for that date a year earlier, however, holdings of turkeys were 24 percent smaller. Stocks of fowls were down 13 percent from July 1, 1940. Stocks of chickens on July 1 were above a year earlier as follows: Broilers, 2 percent; fryers, 100 percent; roasters, 163 percent. Total holdings of all poultry on July 1 were 4 percent over July 1, 1940.

Poultry: Storage stocks in the United States and storage movement at 26 markets

Year	United States stocks		Storage movement, week ending as of 1941					
	June 1	July 1	June	July				Aug.
			28	5	12	19	26	2
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Average 1930-39	51,065	49,517	-323	- 77	- 283	-283	-228	-216
1939	66,796	67,470	-783	-430	-1,079	-282	+ 35	-441
1940	76,904	82,336	+817	- 27	- 326	-100	-355	+1,122
1941	87,433	1/85,874	-716	-615	-1,363			

1/ Preliminary.

Decline in wholesale prices of young stock came earlier this year than last

As a result of the much larger early hatch of chicks this year than last, prices of young stock reached their peaks in April this year whereas in 1940 the peaks came in May and in early June. The peaks also were not quite as high this year as last. In mid-July, however, wholesale prices of live young stock at Chicago were slightly higher than a year earlier; live fowl prices were 4 cents or more higher. The margin over a year earlier may continue smaller for young stock than for fowls largely because of the much larger production of young chickens this year than last and the probable continued smaller marketings of fowl. Furthermore, storage stocks of fowls now are smaller than a year ago whereas stocks of young chickens are about twice as large as in July 1940.

Prices received by farmers for chickens during the remainder of 1941 probably will be above those of a year earlier despite the larger marketings of chickens during the remainder of 1941. Consumer incomes now are about 13 percent larger than a year ago, and supplies of other meats during the next few months will be little different from a year earlier.

Price per pound received by farmers for chickens,
United States

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Average:												
1930-39	14.0	14.2	14.4	15.0	14.7	14.4	14.1	14.0	14.3	13.7	13.3	12.9
1938	16.7	16.0	15.9	16.2	16.1	15.7	15.0	14.2	14.3	13.6	13.6	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.0	13.6	12.7	12.4	11.7
1940	12.0	12.2	12.8	12.9	13.6	13.3	13.6	13.4	13.7	13.3	13.1	13.0
1941	13.7	14.0	14.4	15.7	16.3	16.3						

Turkeys

The number of commercially hatched poults produced during the early part of this season was about the same as the year before. In more recent months, however, the demand increased. During June about 44 percent more poults were produced than in June 1940. And at the end of June advanced orders were about three times as large as a year earlier.

The decline in prices received by farmers for turkeys during the first half of this year was much less than usual. This has resulted partly from the stronger consumer demand and partly from later-than-usual marketings of breeder hens. Prices received by farmers for turkeys in mid-June were about 2-1/2 cents higher than in June 1940 and were only about a half-cent below the 1940 peak last December. Turkey prices very likely will continue well above those of a year earlier during the remainder of 1941.

Price per pound received by farmers for live turkeys, United States

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Average:												
1935-39	17.2	16.8	16.5	16.2	15.5	14.7	14.6	14.4	15.3	16.1	17.2	17.5
1938	17.5	17.7	17.2	17.0	16.4	15.6	15.7	15.0	16.0	16.5	17.1	18.4
1939	18.3	17.5	17.6	16.9	15.6	14.7	14.4	14.3	15.4	15.3	16.0	15.6
1940	14.2	14.0	13.7	13.5	13.2	12.9	12.9	13.4	14.3	14.7	15.5	15.9
1941	15.5	15.1	15.2	15.5	15.4	15.4						

Poultry statistics - United States Census data compared to Department of Agriculture data

Inquiries are being received concerning an apparent lack of harmony between certain of the 1940 Census figures and the estimates published by the Department of Agriculture.

The two sets of figures are not comparable because of differences in method of collection, forms of inquiry, and the season of the year to which they relate. The two supplement each other. The Census Bureau enumerates vital facts at 5-year intervals. The Department of Agriculture publishes current, monthly, and annual estimates using the Census enumerations as its main basis for establishing numbers on hand for the Census years. Its current estimates are based on reported monthly and annual changes in thousands of sample flocks distributed in all States and sections.

A discussion of the relations between the two sets of figures has been prepared by S. A. Jones of the Agricultural Marketing Service. Copies can be obtained upon request to the Marketing Information Division, Agricultural Marketing Service.

DOMESTIC DEMAND

The improvement in the demand for farm products during the last few months reflects mainly the general increase in industrial activity, employment, and consumer purchasing power which has accompanied the expansion of the National defense program. Industrial activity probably will average 20 to 25 percent higher in 1941 than in 1940, and will be by far the highest in the history of the country. Total employment in nonagricultural occupations will average nearly 40 million persons for the year, an increase of about 3 million over 1940. The income of persons engaged in nonindustrial pursuits such as service occupations will not rise proportionately with that of industrial workers but the total income of the urban population in 1941 should be at least one-eighth greater than in 1940. In May the index number of nonagricultural income was about 13 percent over a year earlier. The present rate of the National income is about 86 billion dollars per year. Total National income in 1941 is expected to exceed the 82 billion for 1929 and it may reach 87 or 88 billion dollars compared with 76 billion in 1940.

Index numbers of nonagricultural income

(1924-29 = 100, adjusted for seasonal variation)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Average:												
1930-39	83.4	83.1	83.4	82.9	82.4	83.6	82.7	82.5	82.1	82.3	82.3	82.7
1939	90.6	90.9	91.3	90.0	90.8	92.1	91.8	93.3	93.3	95.0	95.9	97.1
1940	96.9	96.2	95.9	95.3	96.4	97.4	97.8	99.1	99.9	100.3	101.7	104.1
1941	104.7	105.6	106.4	106.4	1/109.1							

1/ Preliminary.

DIFFERENTIALS BETWEEN CHICAGO WHOLESALE PRICES OF HENS AND SPECIFIED MARKET CLASSES OF YOUNG CHICKENS, 1930-31 TO 1940-41

In the June issue of The Poultry and Egg Situation a series of wholesale prices for specified classes of live fowls and chickens at Chicago was published. In this article a discussion is given of the trends and seasonal variation in the differentials between prices of heavy and medium heavy hens and between heavy hens and specified market classes of the heavy breeds of young chickens.

Price differentials between heavy and medium heavy hens

The price spread between heavy and medium heavy hens decreases from April to October or November and gradually increases until March or April. From February through April prices of medium heavy birds usually are higher than those paid for heavy birds, but from July through December, higher prices are usually paid for heavy birds. The seasonal pattern in the price spreads has been essentially the same in every year since 1930-31. Average differentials by months are shown in the table on page 18. No trends are evident in these differentials.

Price differentials between heavy hens and specified classes of young chickens

The chart on the cover page shows the average seasonal variation in the price differentials between heavy hens and broilers, light roasters and heavy roasters for the (Barred) Plymouth Rock breed. The seasonal variation for fryers is essentially the same as for broilers, except that prices are generally not quoted from October to February. Prices on fryers have not been quoted since September 1939, and hence data for this class were not included in the chart.

The seasonal patterns for the price differentials for the various market classes are strikingly similar. All series tend to decline from a peak in April or May to a low point in the fall or winter and then begin to increase in the late winter. However, there are some important differences between the seasonal patterns.

METHOD OF ESTIMATING AVERAGE SEASONAL TREND IN DIFFERENCES BETWEEN WHOLESALE PRICES OF HEAVY HENS AND PLYMOUTH ROCK LIGHT ROASTERS AT CHICAGO

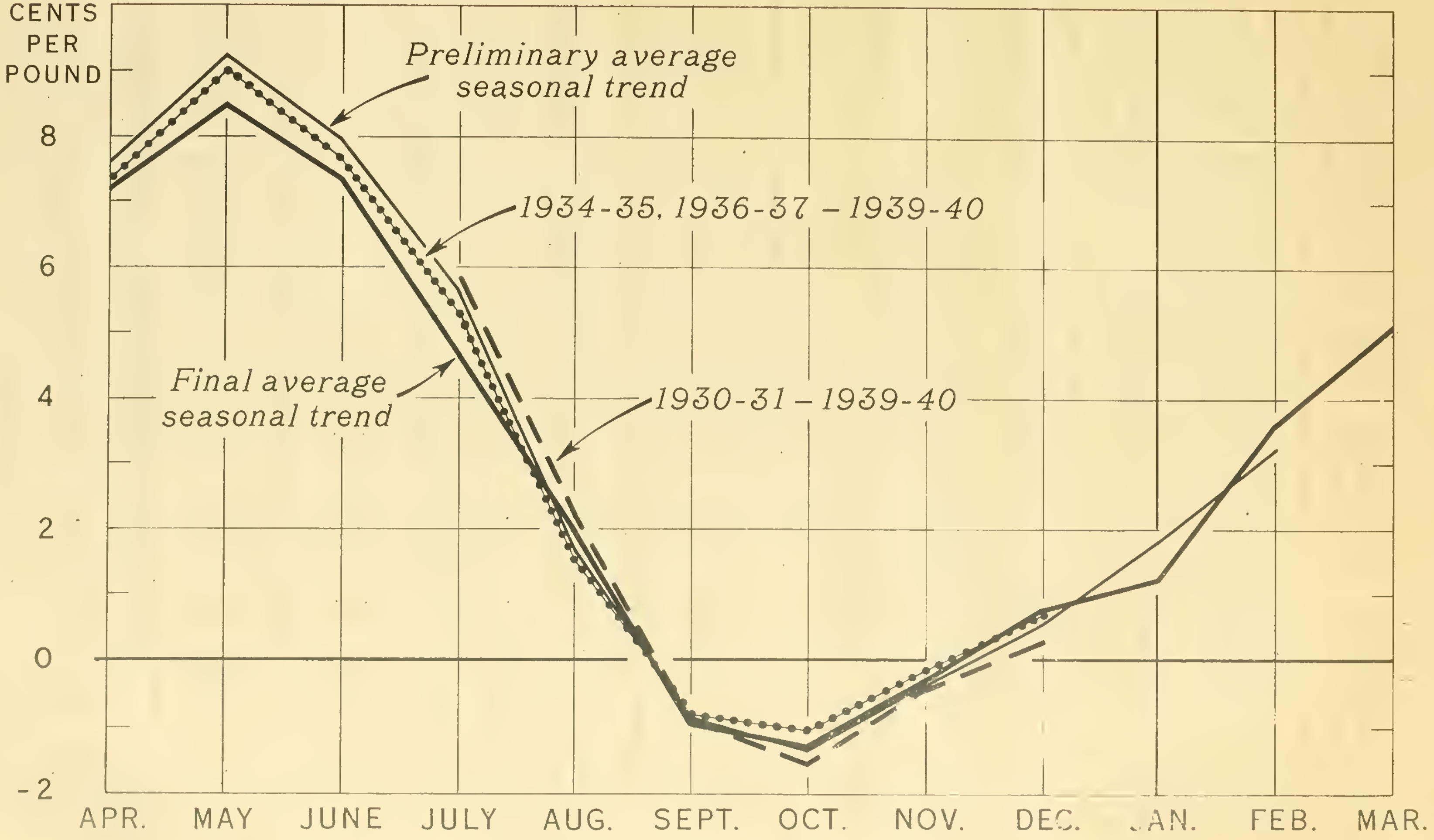


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FIGURE 3

The margin of heavy hen prices over broiler prices reaches a low point in August or September, increases to a peak in November, and then declines to a point in January only slightly higher than that in August or September. The price-spread begins to increase again in February and continues to increase until April. Since 1937, the peak in November has been about 2 cents below the peak in the spring. The margins of prices of heavy hens over prices of both fryers and roasters usually reach a peak in May, decline steadily to September or October, and then increase until April. The total seasonal variation in these margins is largest for heavy and light roasters, and smallest for broilers. The difference between the differential in the high month and the differential in the low month is about 10 cents for heavy and light roasters, 7-1/2 cents for fryers, and 5-1/2 cents for broilers.

The seasonal pattern of price-spreads for the various market classes for other heavy breeds is essentially the same as for Plymouth Rocks. Average differentials by months, between hens and the various other market classes for each breed, are shown in the following table.

Average wholesale price spreads at Chicago between heavy and medium heavy hens and between heavy hens and specified market classes of young chickens, heavy breeds, by months, cents per pound

Breed	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
	Price of medium heavy hens minus price of heavy hens											
---	1.20	.74	.17	-.28	-.96	-2.43	-3.08	-2.94	-2.45	.02	1.25	1.66
	Price of broilers minus price of heavy hens											
Plymouth and White Rock	5.00	5.10	3.70	1.50	.25	- .35	1.35	2.65	1.65	1.00	3.20	4.50
Colored	4.50	4.50	2.80	.30	-1.05	-2.20	- .25	1.25	.40	- .25	1.75	2.95
	Price of fryers minus price of heavy hens											
Plymouth and White Rock	6.10	6.85	5.20	2.90	.95	- .60						5.50
Colored	4.70	5.35	3.30	.50	-1.15	-2.70						---
	Price of light roasters minus price of heavy hens											
Plymouth and White Rock	7.20	8.45	7.30	4.60	1.95	-1.00	-1.35	- .35	.75	1.20	3.60	5.10
Colored	5.75	6.95	5.70	2.70	- .25	-3.20	-2.95	-1.65	- .50	- .25	2.00	3.25
	Price of heavy roasters minus price of heavy hens											
Plymouth and White Rock	8.00	9.20	7.80	5.00	2.20	- .75	-1.10	- .55	.75	1.60	4.60	7.00
Colored	2.75	6.50	5.55	2.75	.05	-2.90	-2.65	-1.35	- .20	.00	.75	1.50

Trends in price-spreads

Ten years is too short a time to give a very definite indication of the nature of the long-time trends in price spreads. However, some tentative conclusions can be given.

The spread between prices of broilers and heavy hens shows the most definite trend. For Plymouth Rocks, the average differential for the months April through September and February and March declined from 6.06 cents in 1933-34 to 2.72 cents in 1939-40. For Colored broilers and heavy hens the average differential in the same months declined from 4.32 cents in 1933-34 to .90 cents in 1939-40.

The price spread between fryers and heavy hens also showed a tendency to decline. For Colored fryers the average differential for the months April through July declined from 10.48 cents in 1931-32 to 2.56 cents in 1939-40. For Plymouth Rocks the average differential for the months April through August declined from 8.61 cents in 1934-35 to 4.00 cents in 1939-40, but in 1932-33 the differential was only 5.40 cents.

In the case of both broilers and fryers, most of the decline took place prior to 1935-36.

The differentials between heavy hens and light and heavy roasters do not appear to have followed any definite trend.

Differentials in 1940-41

Largely as a result of higher egg prices, receipts of fowls at Central Western primary markets during recent months have been much smaller than a year earlier. On the other hand, receipts of young stock have been larger. As is shown in the chart on the cover page, the differentials between heavy hens and the various classes of young chickens have been reflecting these marketing trends. Whereas during 1940 and the first 3 months of 1941 the differentials were about average, during the past 3 months they have been much smaller than usual, indicating that prices of hens have been unusually high relative to those of chickens. This has been true for the Plymouth Rock, White Rock, and Colored breeds.

Since September 1940 prices of medium heavy hens have been high relative to prices of heavy hens.

Methods used in determining trends and average seasonal variation

The most important difficulty in studying trends and seasonal variation in poultry prices or price spreads is that continuous quotations are not available and the months in which quotations are available vary from year to year. By using prices on the "general run" class in 1930 and 1931, a series of prices for heavy hens was obtained for all months and all years. However, the problem of discontinuity still remained with respect to prices of young chickens.

Two solutions to this problem were available. One was to estimate the missing prices (or price spreads) on the basis of prices in preceding or following months and in the corresponding month of other years. However, since one of the purposes of the study was to discover whether there had been a trend or a change in the seasonal pattern of the price spreads, this procedure was thought inadvisable.

An alternative procedure was to obtain all possible price spreads for a particular combination of classes, make up a table of them by months, and then block out combinations of months and years in which price spreads were given for every month and every year included. Such a table for the price of Plymouth Rock light roasters minus the price of heavy hens is shown here.

Plymouth Rocks: Price of light roasters minus price of hens, 1930-39

Year beginning	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1930			10.17	6.28	3.44	- .14	-2.29	- .55	.97	2.18	7.44	5.18
1931				9.62	4.35	-1.57	-2.75	-1.05	- .36	-1.36		
1932			7.87	5.23	1.20	-1.82	-2.75	-2.28	-2.01		2.56	3.86
1933				6.73	2.56	.42	-1.44	- .31	.30	1.83	3.58	4.59
1934	8.73	12.64	11.96	10.11	4.56	.34	- .15	.64	.74	1.60	2.60	1.79
1935		4.43	5.20	3.92	2.62	-2.21	-1.30	.14	.50	1.40	3.77	4.29
1936	6.75	8.99	8.80	5.68	.15	-2.44	-2.85	-2.08	-1.70	.20	3.52	
1937	7.98	10.09	6.19	4.00	2.94	.97	- .50	1.16	2.91		4.06	5.62
1938	7.29	5.94	2.56	1.49	-1.05	-2.56	-2.14	-1.34	- .95	.04	2.72	5.38
1939	5.85	7.24	8.67	5.14	.92	- .72	.12	.82	2.31	1.58	3.12	5.21

By letting one block include the months July through December and the years 1930-39 and another block include the months April-December and February and the years 1934 and 1936-39, the above requirement could be met and still most of the differentials available could be used. By using the two groups, a seasonal pattern for most of the year could be obtained, and by using the first group the trend in the differentials from 1930 to 1939 could be studied.

In studying the price spreads, analysis of variance was first used on each block to test whether there were significant differences between years or between months. If there were, then the monthly and/or annual averages for all blocks involving the same classes were plotted in time series charts to determine the nature of the seasonal variation and whether there was a regular trend or merely a zigzag movement. The indicated results from these charts were then checked against all individual years and/or months for the particular series. If the two were in agreement, the results were assumed to be fairly conclusive. The study of trends was completed with this step.

The above steps formed a basis for indicating whether there was a definite seasonal pattern for any particular price spread. However, the exact value of the average seasonal for each month still had to be determined. It was assumed, on the basis of available data, that the spreads were about the same regardless of the general level of poultry prices and hence that the "average" spread for each month should be expressed in terms of cents rather than percent.

As was mentioned above, charts were made showing the average spread for each month for each block of data. Such a chart showing the price differential between heavy hens and Plymouth Rock light roasters is shown in figure 3. A preliminary estimate of the "average" spread for recent years for each month was read off this chart, using as a basis the block averages shown on the chart modified by any indicated trends in the size of the differentials.

Studies similar to this one had been made for the differentials between the various market classes of young chickens, and between breeds for any given market class. These studies will be discussed in later issues of The Poultry and Egg Situation. It is apparent that the average differential between Plymouth Rock light roasters and heavy hens could be estimated in any of the following ways.

1. Find the average differential between Plymouth Rock light roasters and heavy hens. This method was used in arriving at the preliminary average differential shown in figure 3.

2. Find the average differential between Plymouth Rock broilers and heavy hens and between Plymouth Rock light roasters and Plymouth Rock broilers. Add the two differentials.

3. Find the average differential between Plymouth Rock fryers and heavy hens and between Plymouth Rock light roasters and Plymouth Rock fryers. Add the two differentials.

4. Find the average differential between Plymouth Rock heavy roasters and heavy hens and between Plymouth Rock light roasters and Plymouth Rock heavy roasters. Add the two differentials.

5. Find the average differential between Colored light roasters and heavy hens and between Plymouth Rock light roasters and Colored light roasters. Add the two differentials.

If all the differentials had been based on averages of the same years, the same results would have been obtained by each method. However, as mentioned above, no one set of years could be used. Hence a considerable number of adjustments had to be made in the averages in order to make all of them consistent with each other. In arriving at consistent final average differentials, the seasonal pattern indicated by the block averages was followed as closely as possible, while the actual size of the differential was based on the indicated trends. The final estimated average differentials are assumed to be representative of those in recent years.

Results of analysis of variance tests

Differences between months as tested by analysis of variance were significant for all of the above differentials for all groups of years.

Differences between years for the differential between heavy and medium heavy hens were not significant.

Differences between years for the differentials between heavy hens and the various classes of young chickens were all significant. However, for some breeds and classes no consistent trends were evident but only an erratic up-and-down movement. For these, no trend was assumed to exist.

R. J. FOOTE

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